

REMARKS

Claims 1-23 are pending in this application. Claims 1-3, 11-14, and 19 have been amended to define still more clearly what Applicant regards as his invention. Claims 1, 11-13, 22, and 23 are independent.

Applicant notes with appreciation the allowance of Claims 13-23.

Claims 1-3, 5, 6, and 9-12 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,426,463 to Reininger et al. Claims 4 and 7 were rejected under 35 U.S.C. § 103(a) as being obvious from Reininger et al. in view of U.S. Patent 6,111,609 to Stevens; and Claim 8, as being obvious from Reininger et al. in view of U.S. Patent 5,608,654 to Matsunoshita.

The present invention is directed to improvements in encoding techniques which, as explained in more detail in the present application, encode, for example, a digital motion image input from a camera. In such encoding, problems can arise in the length of time required to encode the image, or in the quality of the image (for example, if non-uniform frames are generated).

Claim 1 is directed to an image encoding apparatus. Input means inputs motion-image data, and control means outputs an encoding parameter such that an amount of code provided when the input motion-image data is encoded in units of predetermined sizes is a predetermined amount of code. Storage means stores the encoding parameter output from the control means. Selecting means selects the encoding parameter output from the control means or a past encoding parameter stored in the storage means. Encoding means encodes the motion-image data input by the input means using the selected encoding parameter.

Among the notable features of Claim 1 are that the image encoding apparatus selects the encoding parameter output from the control means or a past encoding parameter stored in the storage means, and encodes the motion-image data input by the input means using the selected encoding parameter.

Reininger et al., as understood by Applicant, relates to an apparatus for controlling quantizing in a video signal compressor. In Fig. 2, cited in the Office Action, elements 10 to 22 comprise a motion compensated predictive encoder. There are three parallel processing paths shown, respective ones of which process the luminance and two chrominance video components. The motion compensation apparatus 20 operates on the luminance signal to generate motion vectors, which vectors are used in the three processing paths. A common controller 21 communicates with the respective processing circuitry and directs the general operation of the encoder. The apparatus of Fig. 2 also includes a forward analyzer 25 including a storage element 26, a processor 27, and a counter 28. The processor 27 controls the storage element 26 and the counter 28, and communicates with the controller 21 to interrupt processing to allow iteration of quantization adaption.

Importantly, although Reininger et al. discusses inputting motion-image data and controlling quantizing in a video signal compressor, nothing has been found in that patent that would teach or suggest outputting an encoding parameter such that an amount of code provided when the input motion-image data is encoded in units of predetermined sizes is a predetermined amount of code, storing the output encoding parameter in a storage means, selecting the output encoding parameter or a past encoding parameter stored in the storage means, and encoding the input motion-image data using the selected encoding parameter, as recited in Claim 1. By virtue of these features, it is

possible to encode a motion image in real time with the most suitable number of codes which produce a uniform image quality.

Claim 1 is deemed clearly allowable over Reininger et al. for at least the above reasons.

Independent Claims 11 and 12 are method and storage medium claims, respectively, corresponding to apparatus Claim 1, and are believed to be patentable for at least the same reasons as discussed above in connection with Claim 1.

A review of the other art of record has failed to reveal anything which, in Applicant's opinion, would remedy the deficiencies of the art discussed above, as references against the independent claims herein. Those claims are therefore believed patentable over the art of record.

Dependent Claims 2-10 are each dependent from Claim 1 discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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